

IX.6.1-TSESP EXTENDED STREAMFLOW PREDICTION INTERNAL ARRAY TSESP

Function

Array TSESP contains all of the information about each time series used for a given Segment in ESP.

Listing

DIMENSION TSESP(MTSESP)

Contents

Array TSESP contains the following information for each time series that is defined for the Segment.

<u>Position</u>	<u>Description</u>
1	Indicator for the type of time series: 1 = Input 2 = Update 3 = Output 4 = Internal
2	Pointer indicating where in the TSESP array the information for the next time series begins.
3-4	8-character identifier for the time series.
5	4-character data type code for the time series.
6	Data time interval of the time series (hours).
7	Number of values in the time series per time interval.
8	Pointer indicating the starting location of the time series in the D array.
9	Indicator whether the time series contains data values: 0 = no 1 = yes
10	4-character code indicating the type of processed data file accessed for this time series. Not included for Internal time series.
11	Indicator for Output and Update time series indicating when the time series is written: 1 = during execution of the Operations Table

<u>Position</u>	<u>Description</u>
	0 = after execution of the Operations Table Not included for Internal time series.
12	Number of values (NV) of external location information (information needed to read time series data from or write time series data to the data files). Not included for Internal time series.
13 to 12+NV	External location information for the time series. Contents depends on type of data file used.
13+NV (10 for Internal)	Number of values of additional information (NADD) that are associated with the time series.
14+NV to 13+NV+NADD (11 to 10+NADD for Internal)	Additional information associated with the time series.
14+NV+NADD	Number of values of ESP information (NESP). Not included for Internal time series.
15+NV+NADD to 14+NV+NADD+NESP	ESP information associated with the time series.

The last entry in the TSESP array is indicated by either:

1. the number code for the type of time series is zero or
2. the pointer indicating where the next time series is located exceeds MTSESP (the dimension of the TSESP array)

External Location Information

This portion of the TSESP array contains the information used to locate a processed data time series.

File Type Identifier: CALB

Description: Calibration Data File format

<u>Position</u>	<u>Description</u>
1-3	12-character file name
4	4-character data type code
5	Data time interval of the data (hours)
6	Record number within the file where the block header for the time series is located
7-9	12-character station identifier
10-14	Time series creation date: 10 = month 11 = day 12 = year 13 = hour and minute (military time) 14 = seconds
15	Next read location (filled at execution)
16	Pointer location (filled at execution)

File Type Identifier: CARD

Description: DATACARD file format

<u>Position</u>	<u>Description</u>
1	Unit number
2-3	Starting and ending absolute month
4	Multiplication factor for units conversion
5	Addition factor for units conversion
6	Data time interval (hours)
7	Number of data values per time step

<u>Position</u>	<u>Description</u>
8	Length of the directory name
9-28	Directory name
29-36	File name
37-39	Data format
40	Data type code
41	Data time interval (again)
42	'CARD'

File Type Identifier: ESP

Description: ESP input or output file

<u>Position</u>	<u>Description</u>
1-2	8-character time series identifier used by the Forecast Component for this time series
3	4-character data type used by the Forecast Component for this time series
4	Time series data time interval used by the Forecast Component for this time series (hours)
5-7	12-character ESP time series identifier
8	For Input time series from the scratch file - indicator if to delete the time series from the scratch file index after it has been input: 0 = no 1 = yes For Output time series - indicator if the time series should be written only to the scratch time series files: 0 = write to scratch or permanent files depending on HCL Technique PERMWRIT 1 = write only to scratch file regardless of HCL Technique PERMWRIT
9	Unit number to which the time series was written (filled at execution)
10	Initial month written on the file (filled at execution)

<u>Position</u>	<u>Description</u>
11	Initial year written on the file (filled at execution)
12	Number of months of conditional simulated data for each year of historical data (filled at execution)
13	Number of years on file
14	Indicator if the time series contains historical simulation data (filled at execution)
15	Indicator if the time series contains adjusted simulation data (filled at execution)
16	Starting record location of the time series on file (filled at execution)

File Type Identifier: GENR

Description: The time series is generated from information contained in external location information.

<u>Position</u>	<u>Description</u>
1-2	8-character generate type
3 to NV	Generate information - see generate type

Generate Type: BLEND-TS

Description: This generate command blends future data with historical data for precipitation or temperature time series.

<u>Position</u>	<u>Description</u>
3	Weight of future data at the start of the weighting period
4	Weight of future data at the end of the weighting period
5	Length of the weighting period (hours)
6	Length of the blending period (days)
7	Indicator for time series type: 0 = temperature 1 = precipitation
8-9	8-character time series identifier

<u>Position</u>	<u>Description</u>
10	4-character data type code
11	Location of future data in the D array
12-13	Carryover values used for the blend procedure

Positions 14+ contain the information needed to locate the time series.

For file type CALB:

<u>Position</u>	<u>Description</u>
14-16	12-character file name
17	4-character data type code
18	Data time interval (hours)
19	Record number in the file where the block header for the time series is located
20-22	12-character station identifier
23-27	Time series creation date: 23 = month 24 = day 25 = year 26 = hour and minute (military time) 27 = seconds
28	Next read location (filled at execution)
29	Pointer location (filled at execution)

For file type CARD:

<u>Position</u>	<u>Description</u>
14	Unit number
15-16	Starting and ending absolute month
17	Multiplication factor for units conversion
18	Addition factor for units conversion
19	Data time interval (hours)
20	Number of data values per time step
21	Length of the directory name

<u>Position</u>	<u>Description</u>
22-41	Directory name
42-49	File name
50-53	Data format
54	Data type code
41	Data time interval (again)
42	'CARD'

Generate Type: CREAT-PE

Description: This generate command creates a daily potential evapotranspiration time series using monthly values.

<u>Position</u>	<u>Description</u>
3-14	12 monthly potential evapotranspiration values associated with the 16th day of the month (January through December)

File Type Identifier: MSNG

Description: The time series contains all missing data. No external location information is needed.

File Type Identifier: REPL

Description: The time series defined by the Forecast Component is replaced with a new time series. The new time series is stored in the same location in the D array as the original time series. The new time series is used whenever the old time series is referenced.

External location information is dependent on the new file type.

ESP Information

This portion of the TSESP array contains information which is needed for special ESP cases. It is required when the type of processed data file is 'REPL' and also when Update time series are used.

Case: Processed data file type is REPL

Description: When the time series defined by the forecast program is to be replaced the new time series information is stored in the ESP information.

<u>Position</u>	<u>Description</u>
1	New 4-character processed data file code
2-3	New 8-character time series identifier
4	New 4-character time series data type code
5	New time interval for the time series (hours)

Case: Update time series

Description: When update time series are used in ESP, external location information will be needed for both input and output since, in most cases, the input time series will be historical data stored on the calibration type data files which should not be overwritten.

<u>Position</u>	<u>Description</u>
1	4-character processed data file code for output
2	Number of values of external location information for the output time series (NVO)
3 to 2+NVO	External location information for the output time series